UNIVERSITY AT ALBANY
State University of New York

Algebra/Topology Seminar

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Assembly Maps for Topological Cyclic Homology of Group Algebras — Part 2

Thursday, November 12, 2015
1:15 p.m. in ES-143

Abstract. In this series of talks I will present joint work with Wolfgang Lück, Holger Reich, and John Rognes on assembly maps for topological cyclic homology and related theories of group algebras. Topological cyclic homology was invented by Bökstedt, Hsiang, and Madsen in their celebrated work on the K-theoretic Novikov Conjecture, and provides a powerful tool for computations in algebraic K-theory. It is a subtle equivariant refinement of Bökstedt's topological Hochschild homology, which is a stable homotopy theoretic version of Hochshild homology, which in turn can be seen as the linear analog of Waldhausen's cyclic nerve. After reviewing the construction of all these theories, I will explain how to use assembly maps to study them in the case of group rings or ringspectra. I will then present our general isomorphism, injectivity, and rational injectivity results for these assembly maps, and discuss the possible failure of surjectivity. Some of these results are from our recent preprint arXiv:1504.03674, and some are new and will appear in a forthcoming article.